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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,120	04/30/2001	Gregory Paul Matthews	GP-300996	1622
7590	04/28/2004			EXAMINER
CHRISTOPHER DEVRIES General Motors Corporation Legal Staff, Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			MILLER, CARL STUART	
			ART UNIT	PAPER NUMBER
			3747	Y
			DATE MAILED: 04/28/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/845,120	MATTHEWS ET AL.
	Examiner Carl S. Miller	Art Unit 3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 28 January 2004.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi in view of Stockhauser.

In particular, the applicant should see Figure 1 of Taguchi which includes a torque sensor (29), a spark control (gasoline), throttle control motor, throttle position sensor and pedal position sensor. Also, the last line of the abstract makes it clear that the object of the device is to keep torque constant with changes in the capacity of the engine.

Stockhauser teaches a cylinder cutout which keeps the intake valves closed to disable individual cylinders. Since stopping the airflow to individual cylinders is now a common way to disable the cylinder, it would have been obvious to use this technique in Taguchi.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi in view of Kato ('296) and Stockhauser. Taguchi applies as noted, as does Stockhauser,

and Kato teaches the well-known use of an encoder to sense the position of an accelerator pedal, thereby making this type of sensor an obvious choice for Taguchi.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 and 9-14 are rejected under 35 U.S.C. 103(a) being unpatentable over Taguchi in view of Yamanaka ('633) and Stockhauser.

Taguchi and Stockhauser apply as noted above. Yamanaka teaches another variable displacement engine (having 8 cylinders) which also cuts out cylinders in order to vary the effective displacement of the engine.

Yamanaka is also a gasoline engine and includes an air mass sensor that is used to set the desired torque by using this parameter to sense engine load. As noted in the Abstract, an actuator is used to reposition the throttle in order to let in more air with less cylinders actuated in order to keep torque constant. Both Yamanaka and Taguchi would use some type of servo and feedback control to reposition the throttle valve. Finally, models or maps are used to select the torque based upon the load (air flow) and other parameters (including other load parameters),

It would have obvious to use an airflow sensor as a load input for calculating desired torque in Taguchi because Taguchi also talks about setting a desired torque even though he does not detail how this is set.

Applicant's arguments filed January 28, 2004 have been fully considered but they are not persuasive. In particular, the applicant has now amended his claims to require that the cylinders be disabled by holding the intake valves closed so no air passes through the disabled cylinders. This idea is now common in the art since electronically controlled valves (such as the ones in Stockhauser) allow the closure of individual valves without changing the movement of the camshaft. Stockhauser merely stops the valves from opening by venting a hydraulic fluid via solenoids and this disables the cylinder in the same way that a lack of fuel and/or spark would have in the past.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Carl Miller at telephone number 308-2653.

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Miller/DI

April 6, 2004



Carl S. Miller  
Primary Examiner